



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Declaration for Patent Application

[ ] Supplemental (37 C.F.R. §1.67)

As a named inventor, I hereby declare that:

My residence, mailing address and citizenship are as stated next to my name;

I believe I am the original, first and sole inventor (if only one name is listed) or an original, first and joint inventor (if plural names are listed in the signatory page(s) commencing at page 2 hereof) of the subject matter which is claimed and for which a patent is sought on the invention entitled

DETERMINING A TANGENT SPACE AND FILTERING DATA ONTO A MANIFOLD

the specification of which (check one)

- [ ] is attached hereto.
- [X] was filed on September 15, 2003 as United States Application Number 10/662,991.
- [ ] was filed on [PCT Filing Date] as PCT International Application No. [PCT Appl'n No.] [OPTION and assigned United States Application No. [ ]].
- [ ] and was amended on [ ] (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119 or 365 of any foreign application(s) for patent or inventor's certificate, or of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed:

<u>Prior Foreign Application(s)</u>			Priority Not Claimed	Certified Copy Filed?	
				YES	NO
(Number) _____	(Country) _____	(Day/Month/Year filed) _____	[ ]	[ ]	[ ]
(Number) _____	(Country) _____	(Day/Month/Year filed) _____	[ ]	[ ]	[ ]
(Number) _____	(Country) _____	(Day/Month/Year filed) _____	[ ]	[ ]	[ ]

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Full name of sole

or first inventor Joel M. MacAuslan

Inventor's Signature Joel MacAuslan Date 2003/10/7

Residence 8 Kim Drive

Nashua, New Hampshire 03062

Citizenship USA

Mailing Address Same as above

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::ODMA\MHODMA\MANAGE;424217;I

# HAMILTON, BROOK, SMITH & REYNOLDS, P.C.



## POWER OF ATTORNEY OR AUTHORIZATION OF AGENT AND CORRESPONDENCE ADDRESS

Application Number	10/662,991
Filing Date	September 15, 2003
First Named Inventor	Joel M. MacAuslan
Confirmation Number	2250
Group Art Unit	2123
Examiner Name	Not Provided
Attorney Docket Number	2433.1002-004

Title	Determining A Tangent Space And Filtering Data Onto A Manifold
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I/We hereby appoint

- ☒ the attorneys/agents associated with **Customer No. 021005**  
☐ Practitioner(s) named below:

as my/our attorneys/agents to prosecute the application identified above, including any continuation or divisional applications thereof, and to transact all business in the United States Patent and Trademark Office connected therewith.

The correspondence address for the above-identified application is:

- ☒ Customer Number 021005  
 Hamilton, Brook, Smith & Reynolds, P.C.  
 530 Virginia Road  
 P.O. Box 9133  
 Concord, Massachusetts 01742-9133  
☐ Other \_\_\_\_\_

Please direct all telephone calls and facsimiles to:

Name David J. Thibodeau, Jr. Tel. No. 978-341-0036 Fax No. 978-341-0136

I am the:

- ☐ Applicant/Inventor.  
☒ Authorized representative of the Assignee, Speech Technology and Applied Research Corporation, of the entire interest. See 37 C.F.R. § 3.71. A Statement under 37 C.F.R. § 3.73(b) is enclosed.  
☐ Authorized representative of the Assignee, [ ], together with [ ], of the entire interest. A Statement under 37 C.F.R. § 3.73(b) is enclosed.

### SIGNATURE of Applicant or Assignee of Record

Name & Title	Joel MacAuslan, President
Signature	Joel MacAuslan
Date	2004/1/5



Docket No. 2433.1002-004

STATEMENT UNDER 37 C.F.R. § 3.73(b)

Inventor(s): Joel M. MacAuslan

Application No./Patent No.: 10/662,991 Filed/Issue Date: September 15, 2003

For: Determining A Tangent Space And Filtering Data Onto A Manifold

Speech Technology and Applied Research Corporation, a Corporation,  
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is

- A. ☒ the assignee of the entire right, title and interest in the patent application identified above; or
- B. ☐ an assignee together with ☐ of the entire right, title and interest in the patent application identified above.

The right, title and interest of the above-named assignee in the patent application identified above is established by virtue of:

- A. ☒ An assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.

OR

- B. ☐ A chain of title from the inventor(s) of the patent application identified above, to the current assignee as shown below:

1. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.
2. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.
3. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Date: 2004/1/5

Name: Joel MacAuslan

Title: President

Signature: Joe MacAuslan

COPY

Docket No. 2433.1002-004

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ASSIGNMENT

WHEREAS, I, **Joel M. MacAuslan**, have invented a certain improvement in **Determining A Tangent Space And Filtering Data Onto A Manifold**, described in an application for Letters Patent of the United States,

- ☐ the specification of which is being executed on even date herewith and is about to be filed in the United States Patent Office (*use for 37 CFR §1.53(b) filings only*);
- ☒ the specification of which was filed on **September 15, 2003** as United States Application No. **10/662,991**;
- ☐ the specification of which is the United States National Stage of International Application No. [PCT Appl'n No.], filed on [PCT Filing Date] [OPTION and assigned United States Application No. [ ] (*use for 35 USC §371 filings only*);
- ☐ which was patented under United States Patent No. [ ] on [ ].

WHEREAS, **Speech Technology and Applied Research Corporation** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Delaware** and having a usual place of business at **54 Middlesex Turnpike, Bedford, Massachusetts 01730** desires to acquire an interest therein in accordance with agreements duly entered into with me;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by me had this assignment and sale not been made; I hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. I hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its

successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, I do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal the date set forth below.

Inventor's Signature: \_\_\_\_\_

Joel M MacAuslan  
Joel M. MacAuslan

State/Commonwealth \_\_\_\_\_

of \_\_\_\_\_

Massachusetts

County of \_\_\_\_\_

Middlesex

Then personally appeared before me the above-named **Joel M. MacAuslan** and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 22 day of October, 2003.

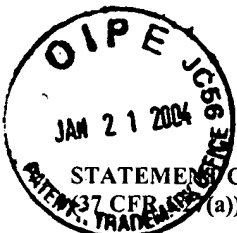
(SEAL)

Michelle Gasper  
Michelle Gasper

Notary Public

(print name)

My Commission expires 4 / 8 / 05



STATEMENT CLAIMING SMALL ENTITY STATUS  
37 CFR 1.27(a)-SMALL BUSINESS CONCERN

DOCKET NUMBER: 2433.1002-004

Applicant or Patentee: Joel M. MacAuslan  
Application or Patent No.: 10/662,991  
Filed or Issued: September 15, 2003  
Title: DETERMINING A TANGENT SPACE AND FILTERING DATA ONTO A MANIFOLD

I hereby state that I am

- ☐ the owner of the small business concern identified below:  
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN Speech Technology and Applied Research Corporation  
ADDRESS OF SMALL BUSINESS CONCERN 54 Middlesex Turnpike  
Bedford, Massachusetts 01730

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small business concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416 or you may call 202-205-6618.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

- ☐ the specification filed herewith with title as listed above.  
☒ the application identified above.  
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each person, concern or organization having rights in the invention must file separate statements as to their status as small entities. No rights to the invention are held by any person who would not qualify as a person under 37 CFR 1.27(a)(1), or by any concern which would not qualify as a small business concern under 37 CFR 1.27(a)(2), or a nonprofit organization under 37 CFR 1.27(a)(3).

Each additional person, concern or organization having any rights in the invention is listed below:

- ☒ no such person, concern, or organization exists.  
☐ each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities.

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.27(g)(2))

NAME OF PERSON SIGNING Dr. Joel M. MacAuslan

TITLE OF PERSON IF OTHER THAN OWNER President

ADDRESS OF PERSON SIGNING 54 Middlesex Turnpike, Bedford, Massachusetts 01730

SIGNATURE Joel MacAuslan DATE 2003/10/22  
@PFDesktop\ODMA\MHODMA\iManage;427659;1